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Table1: In case of printing without color ink

First ink cartrige 500	second ink cartige 600	ink value for using printing		waste ink value	
		black ink	color ink	black ink	color ink
first	first	a1 (cc)	0 (cc)	(n2/n1) × b1 (cc)	b1 (cc)
	second	a2 (cc)	0 (cc)	(n2/n1) × b2 (cc)	b2 (cc)
	third	a3 (cc)	0 (cc)	(n2/n1) × b3 (cc)	b3 (cc)
	p'th	ap (cc)	0 (cc)	(n2/n1) × bp (cc)	bp (cc)
total			0 (cc)	(n2/n1) × Σbi (cc)	Σbi (cc)
Second (black ink) cartridge		a1+(n2/n1) × b1=a2+(n2/n1) × b2=・・・・=V2			
First (color ink) cartirge		b1+b2+・・・bp=Σbi=V1			
waste ink value		(n2/n1) × Σbi+Σbi=((n2+n1)/n1) × Σbi			

Table 2: In case of printing with color ink

First ink cartridge 500	Second ink cartridge 600	ink value for using printing		waste ink value	
		black ink	color ink	black ink	color ink
frist	frist	d1 (cc)	c1 (cc)	(n2/n1) × e1 (cc)	e1 (cc)
	second	d2 (cc)	c2 (cc)	(n2/n1) × e2 (cc)	e2 (cc)
	p'th	dq (cc)	cq (cc)	(n2/n1) × eq (cc)	eq (cc)
total			Σ ci (cc)	(n2/n1) × Σ ei (cc)	Σ ei (cc)
Second (black ink) cartridge		d1 + (n2/n1) × e1 = d2 + (n2/n1) × e2 = ···· = V2			
First (color ink) cartrige		(c1 + ·· + cq) + (e1 + ·· + eq) = Σ ci + Σ ei = V1			
waste ink		(n2/n1) × Σ ei + Σ ei = ((n2 + n1)/n1) × Σ ei			

Fig.1

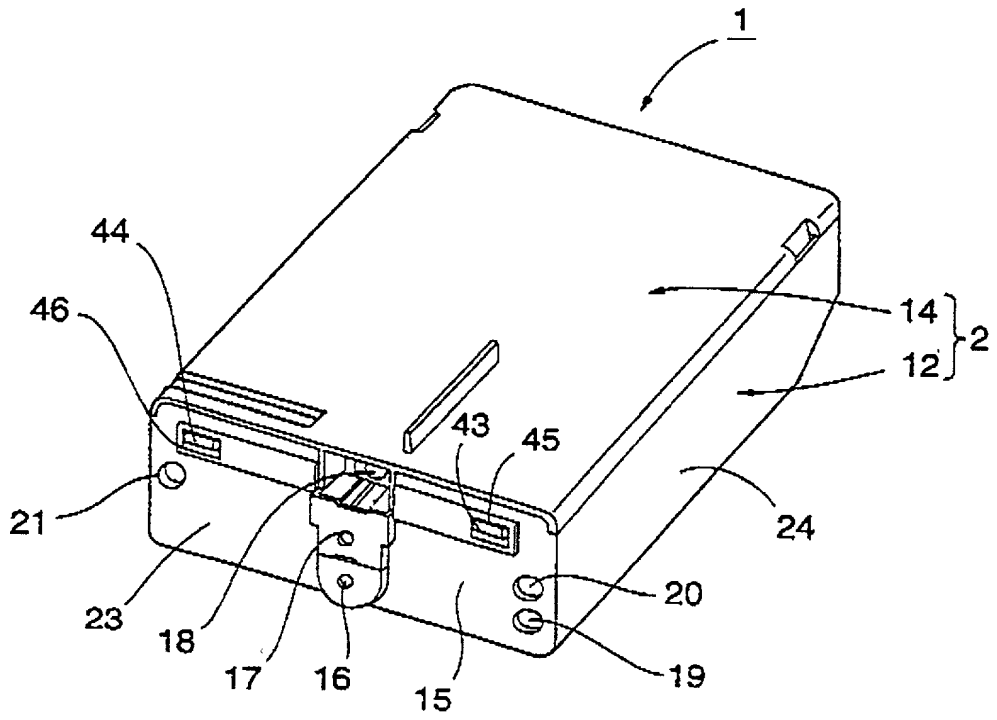

Fig.2

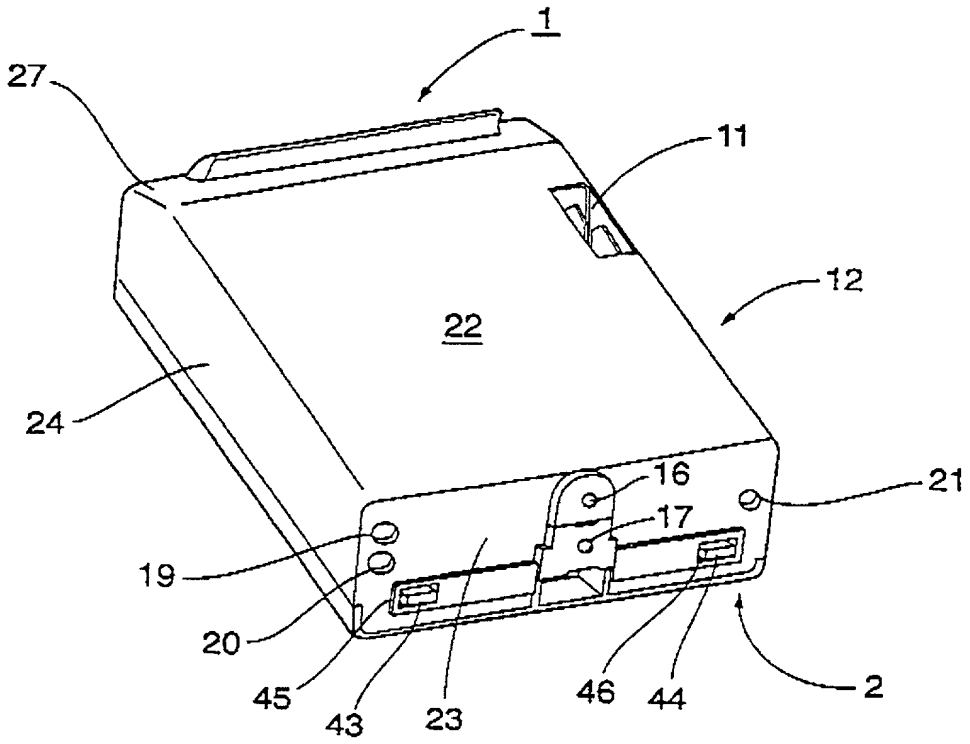

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Fig.3

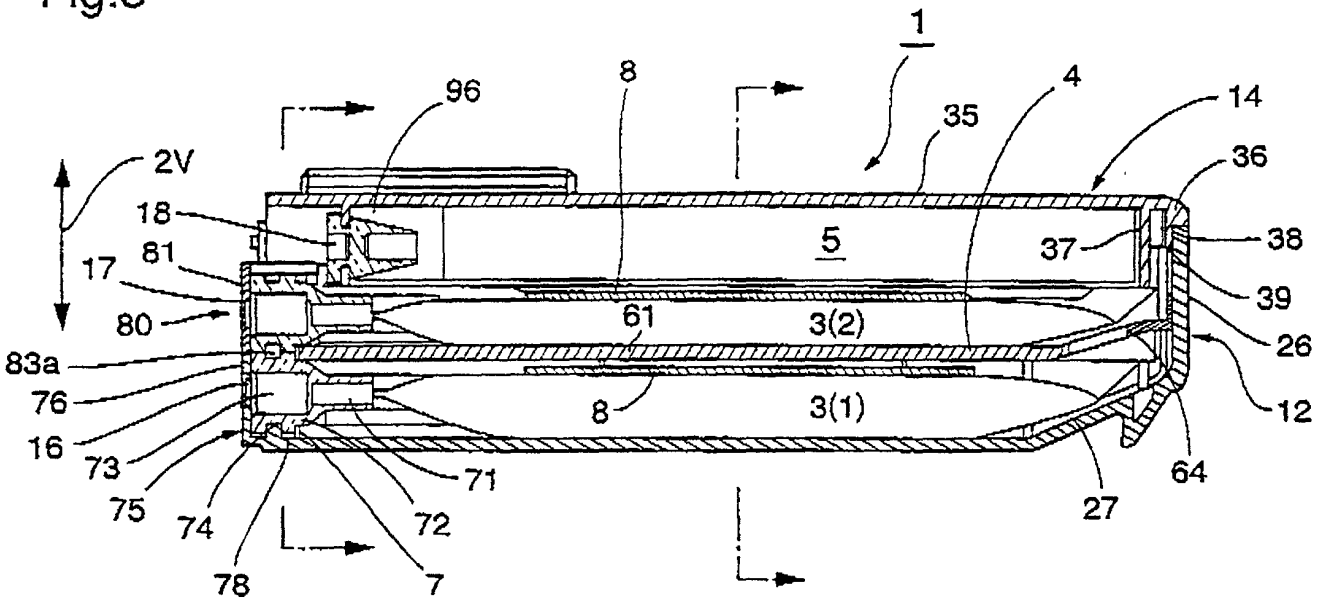
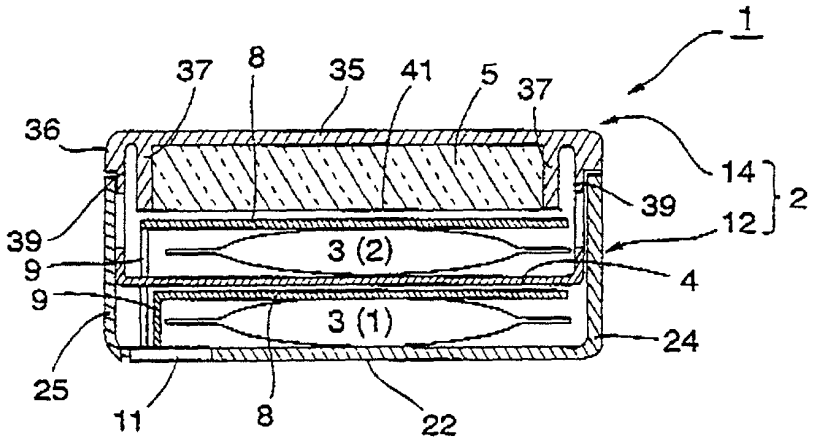


Fig.4



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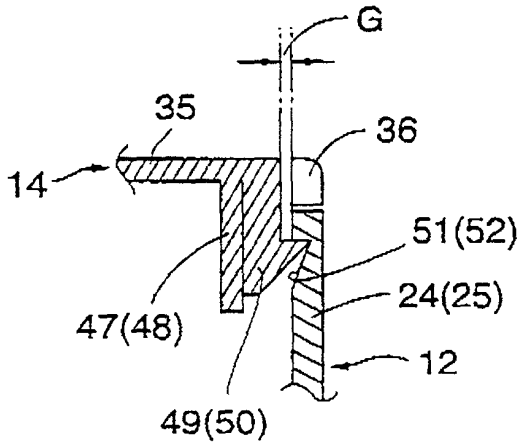

Fig.5

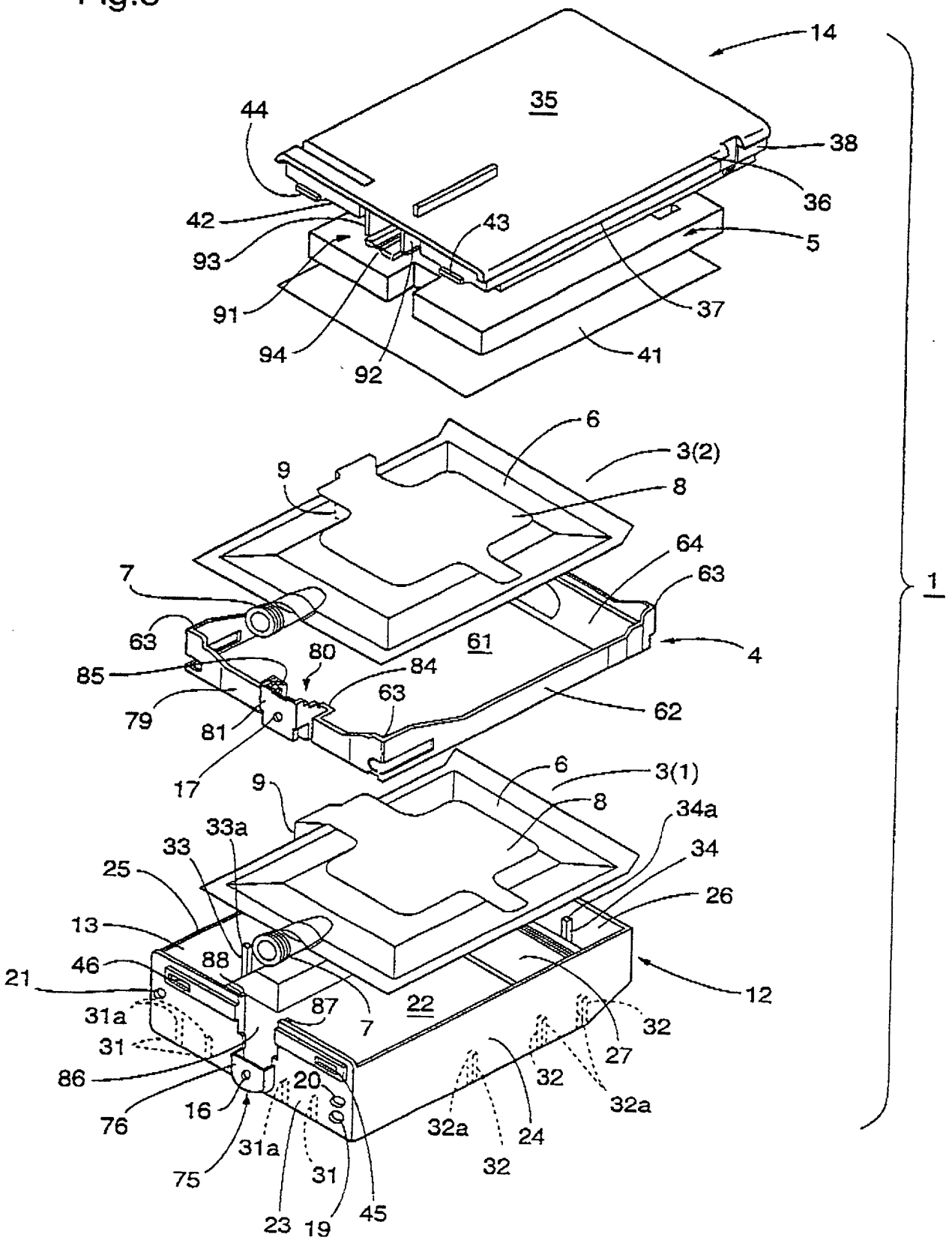
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Fig.7

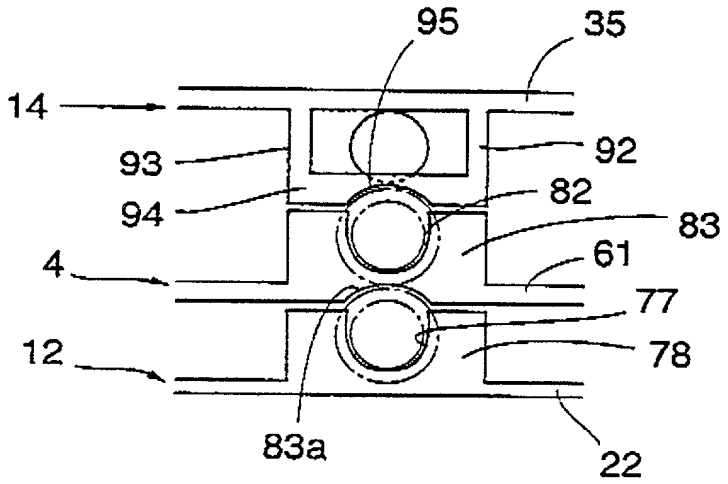

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Fig.8

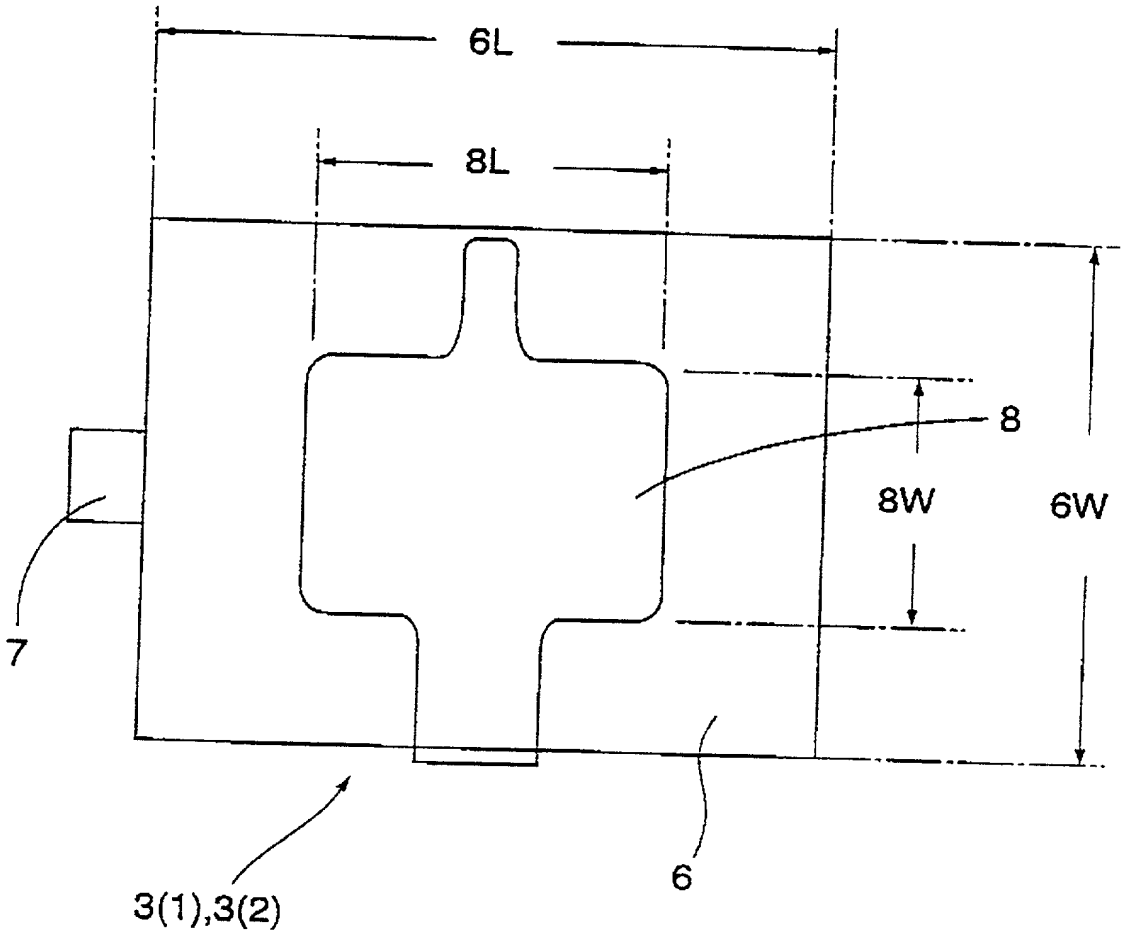

Fig.9

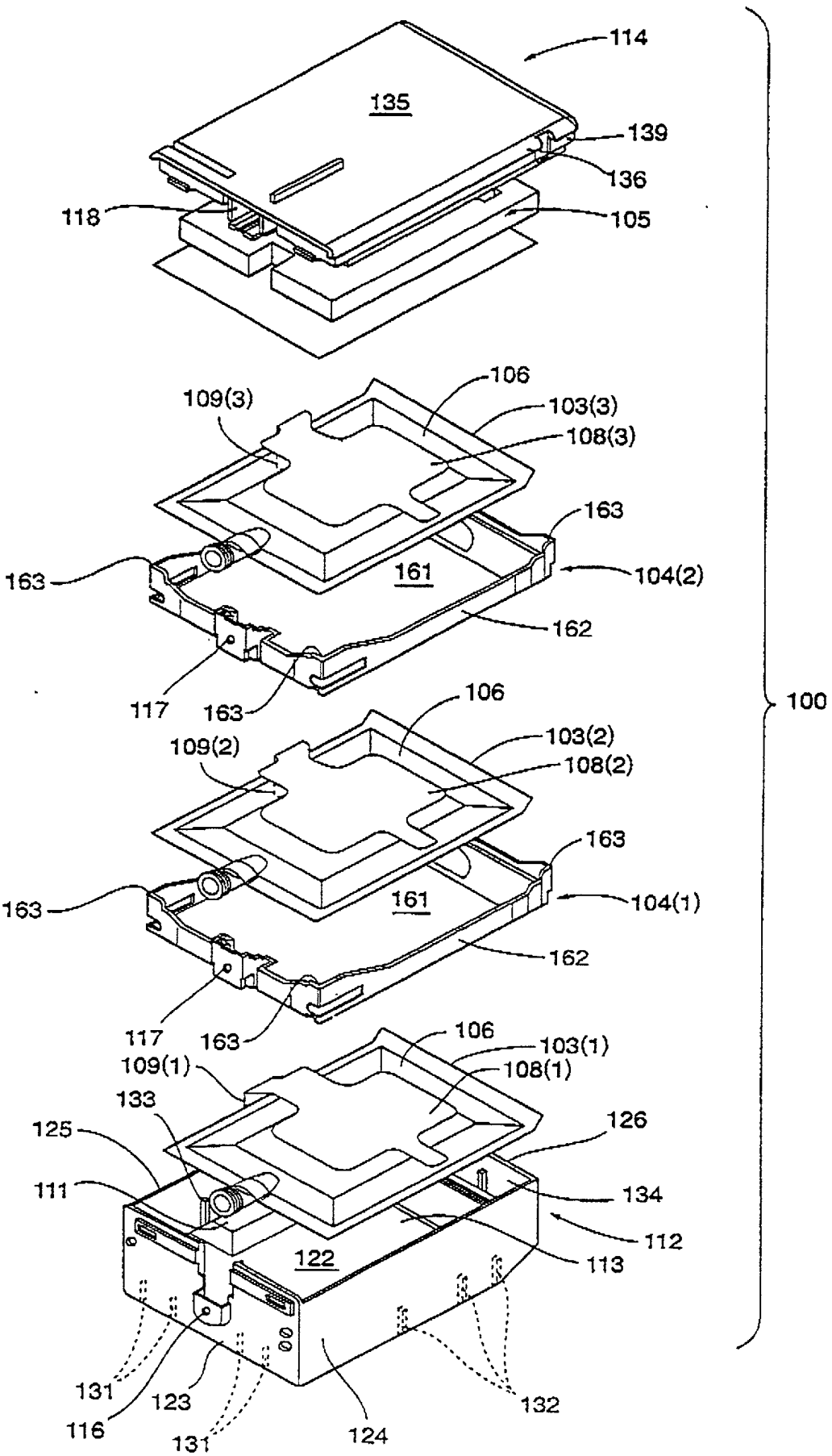

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Fig.10

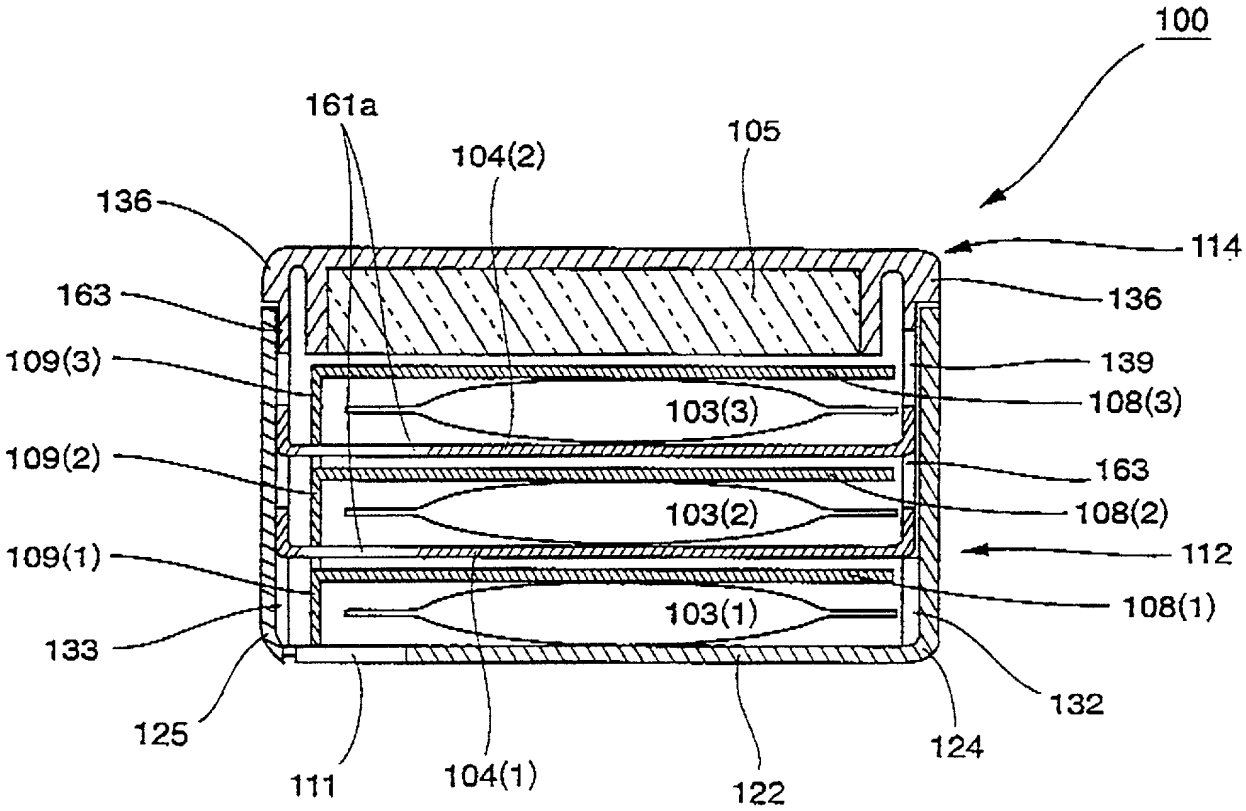
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Fig.11

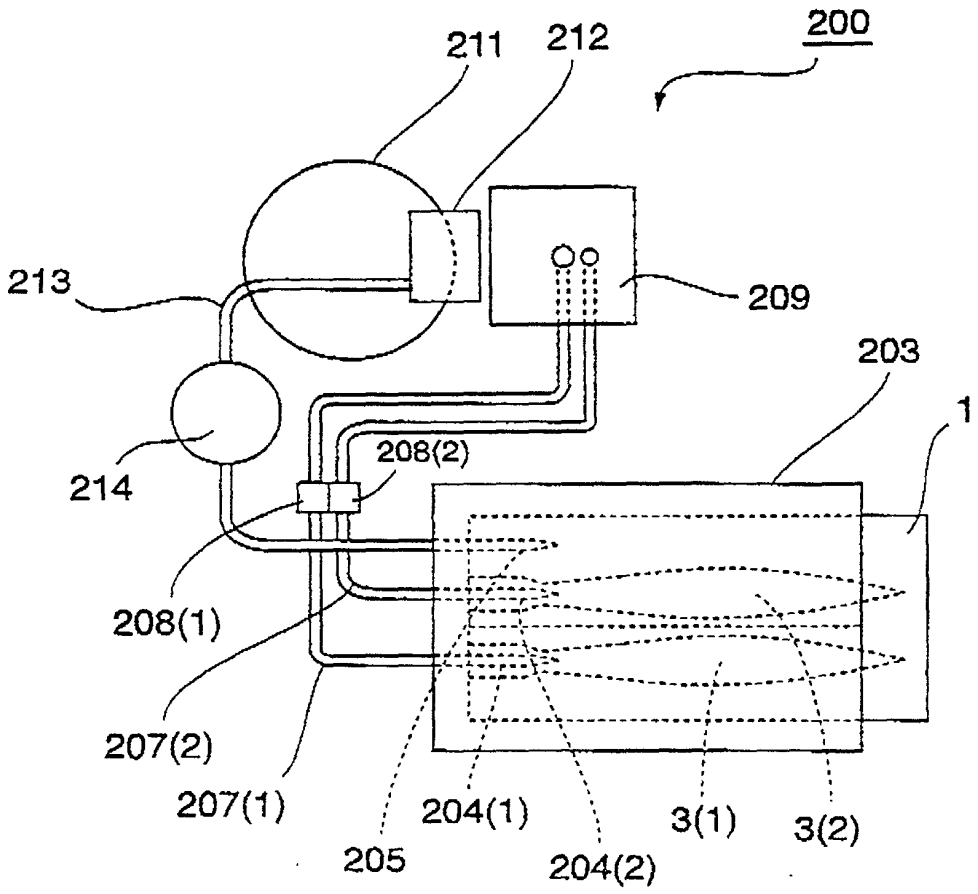
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Fig.12

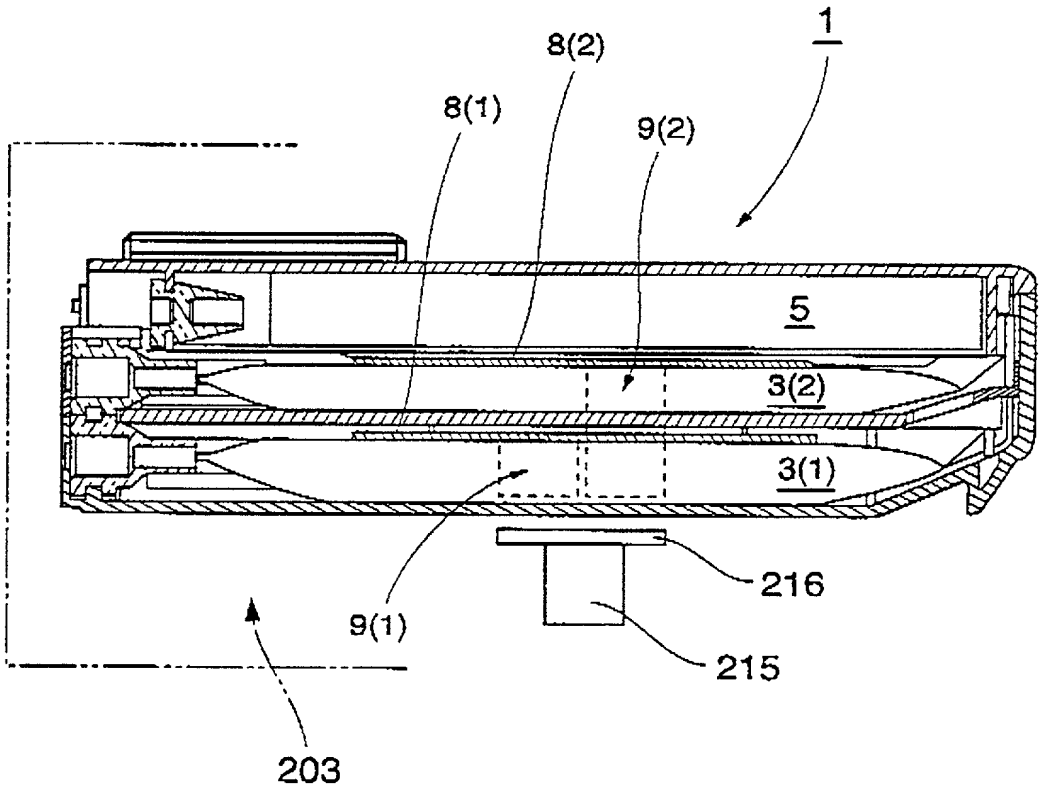

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Fig.13

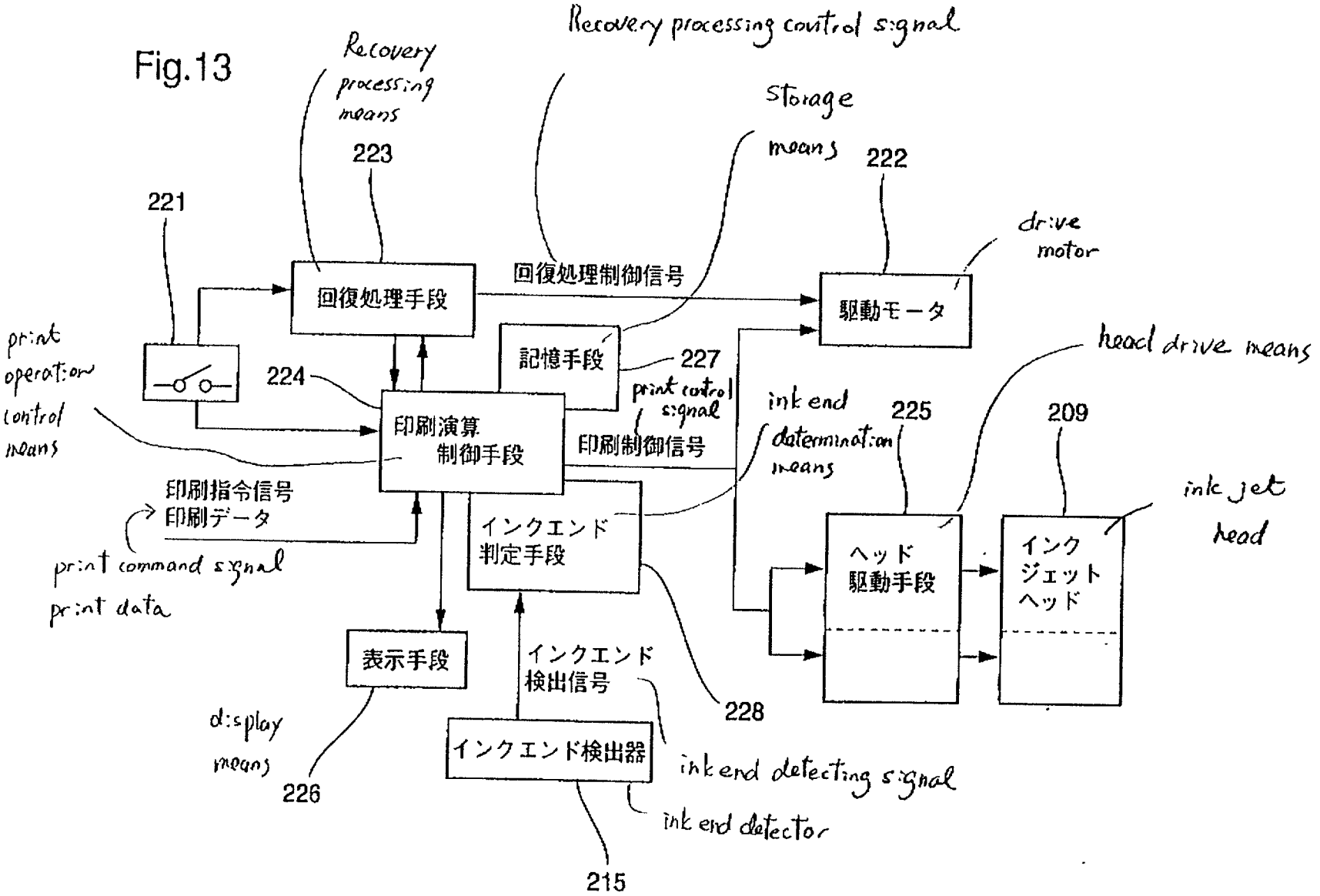
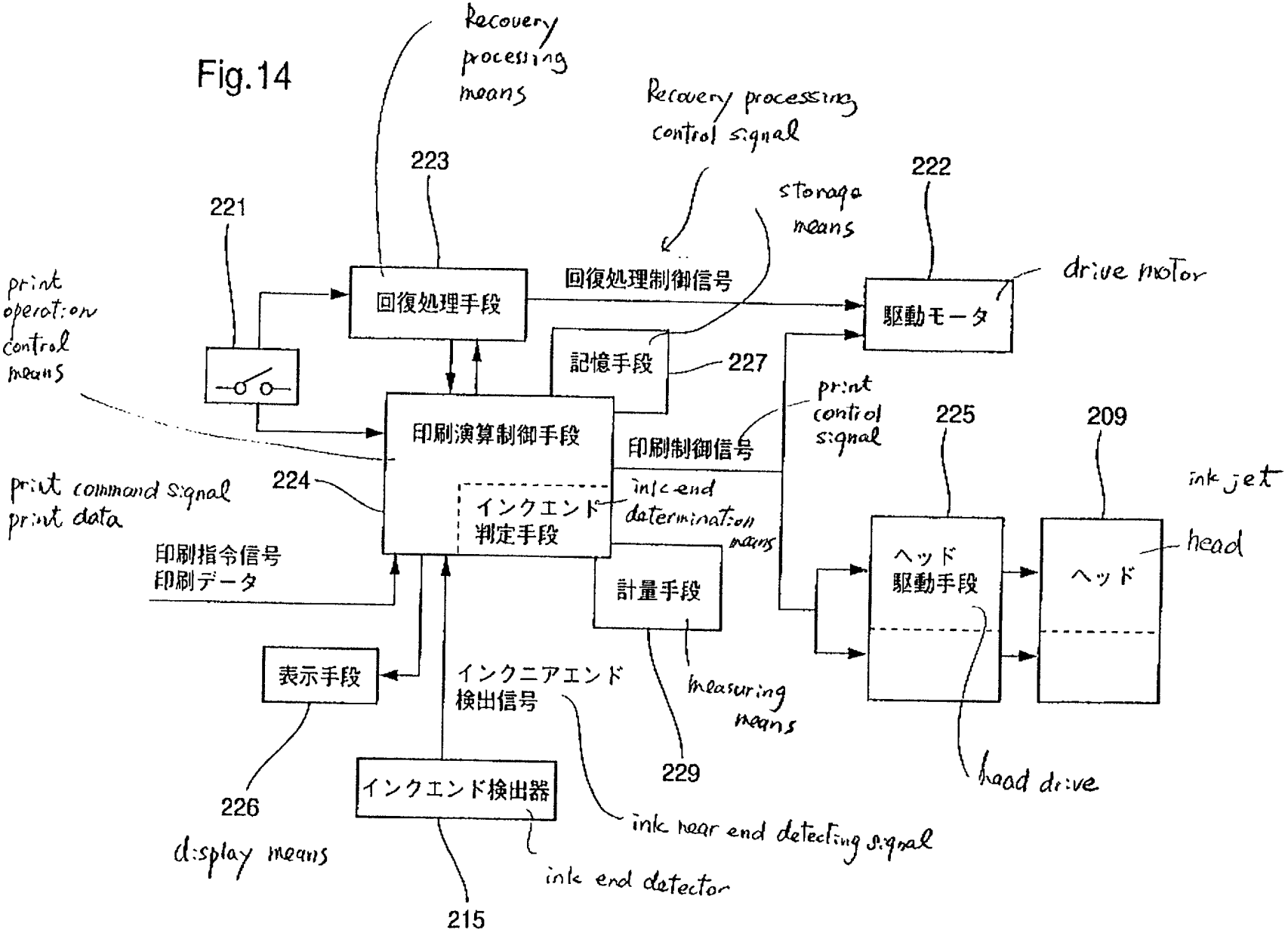


Fig.14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Recovery processing control signal
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drive motor
print operation control means
記憶手段
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print control signal
印刷演算制御手段
印刷制御信号
225
209
ink jet
224
print command signal
print data
インクエンド判定手段
ink end determination means
head
印刷指令信号
印刷データ
ヘッド駆動手段
ヘッド
計量手段
表示手段
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Fig.15

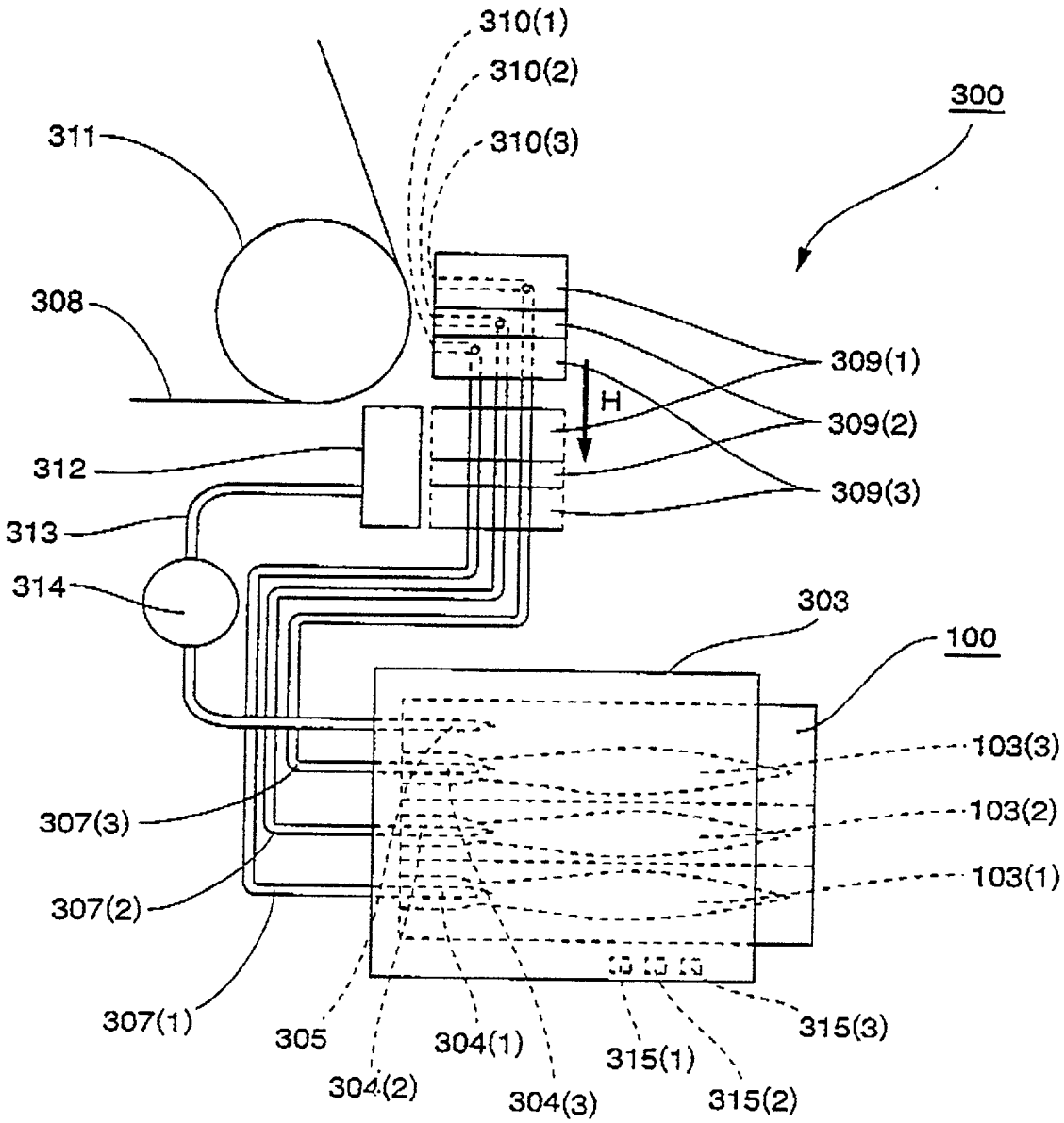
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Fig.16

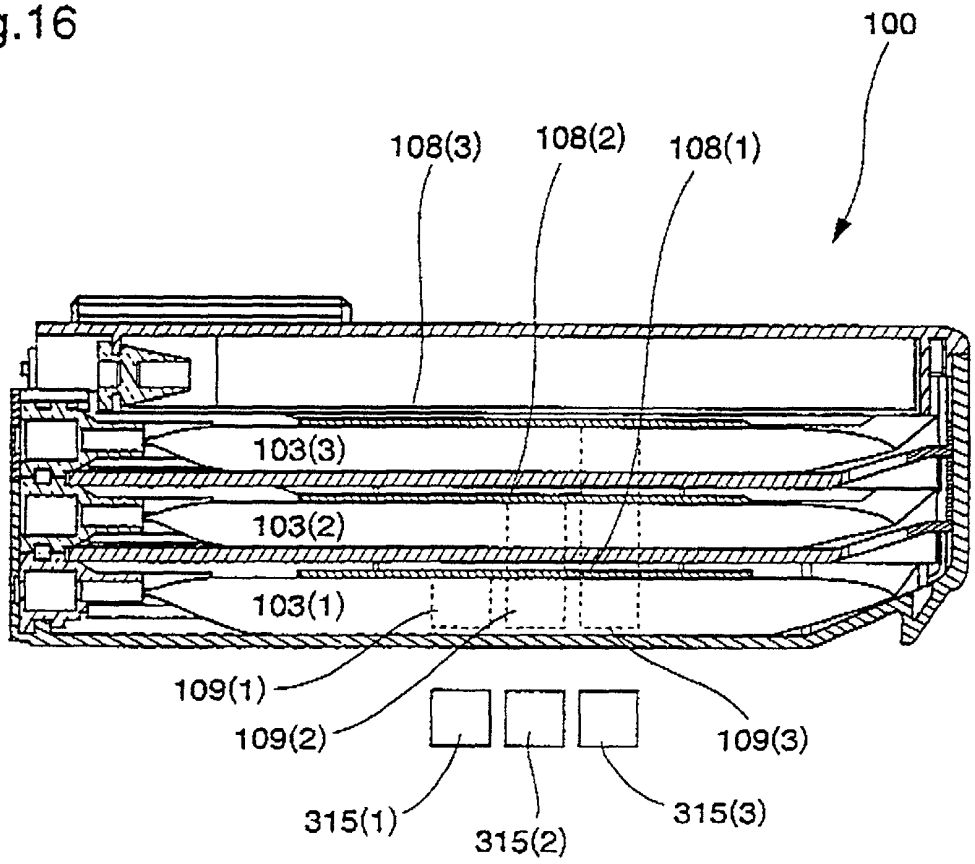
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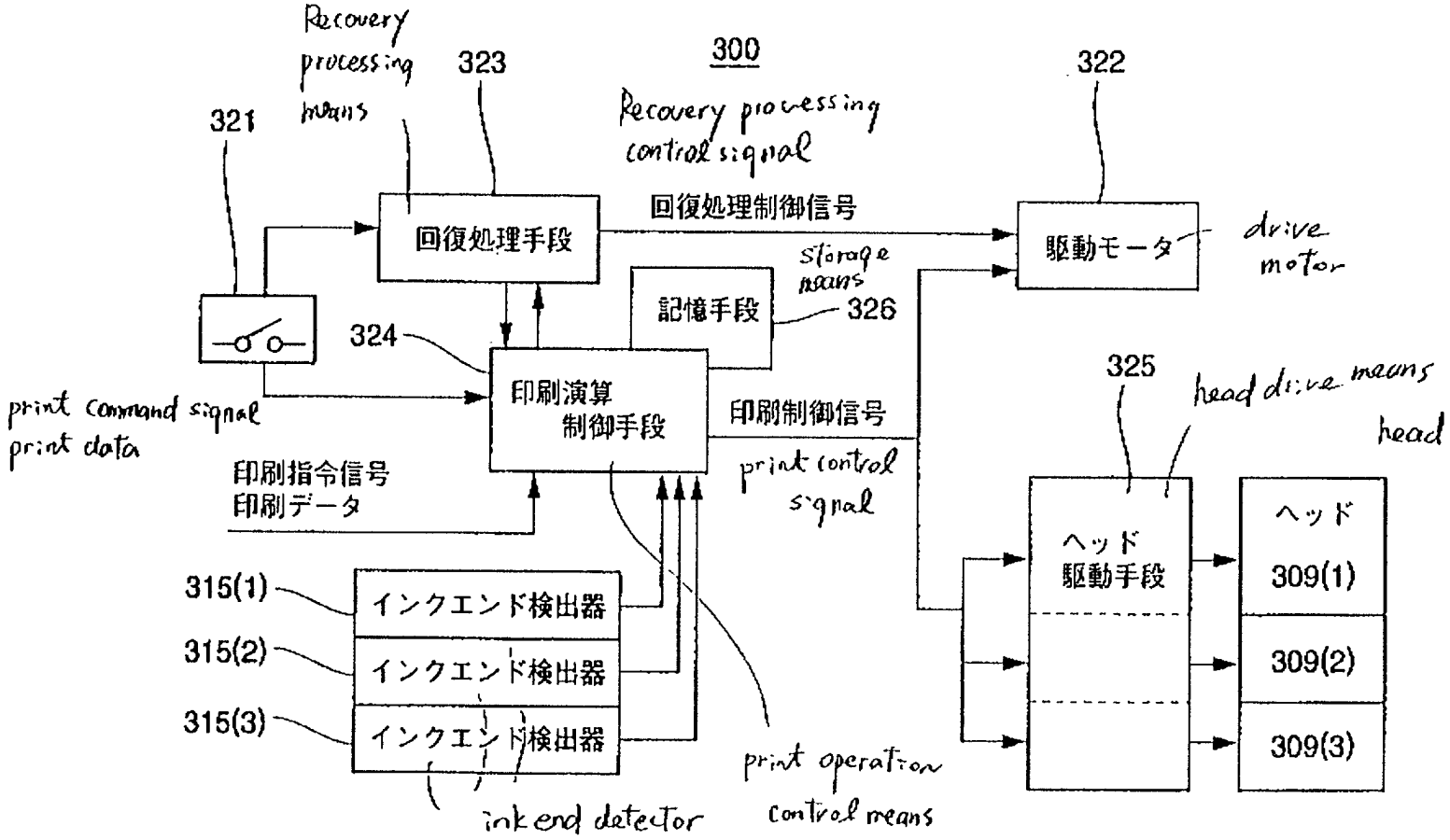
Fig.17



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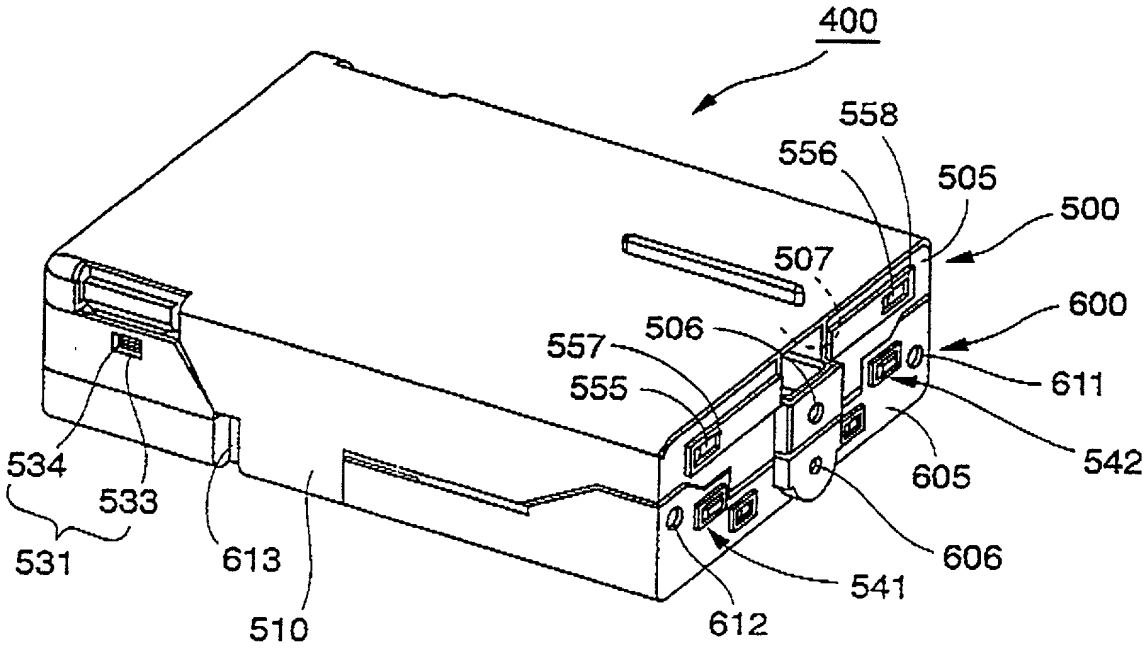
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Fig.19

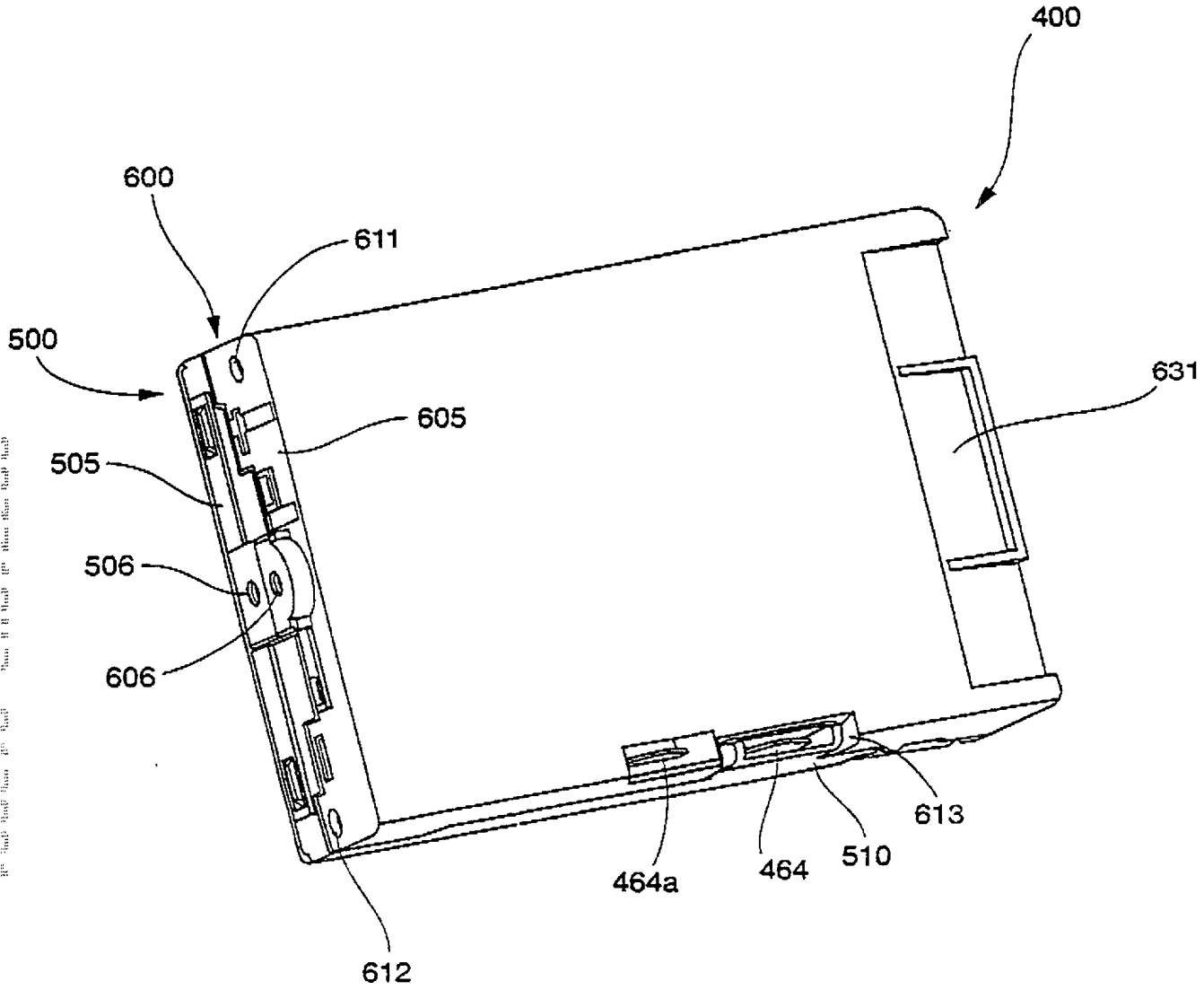

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Fig.20

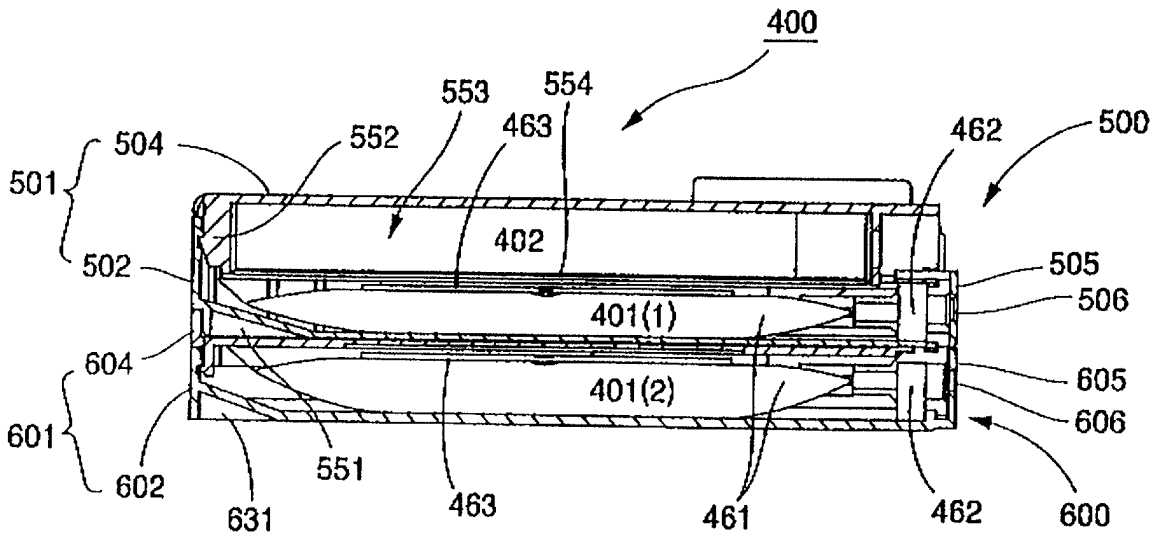
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Fig.21

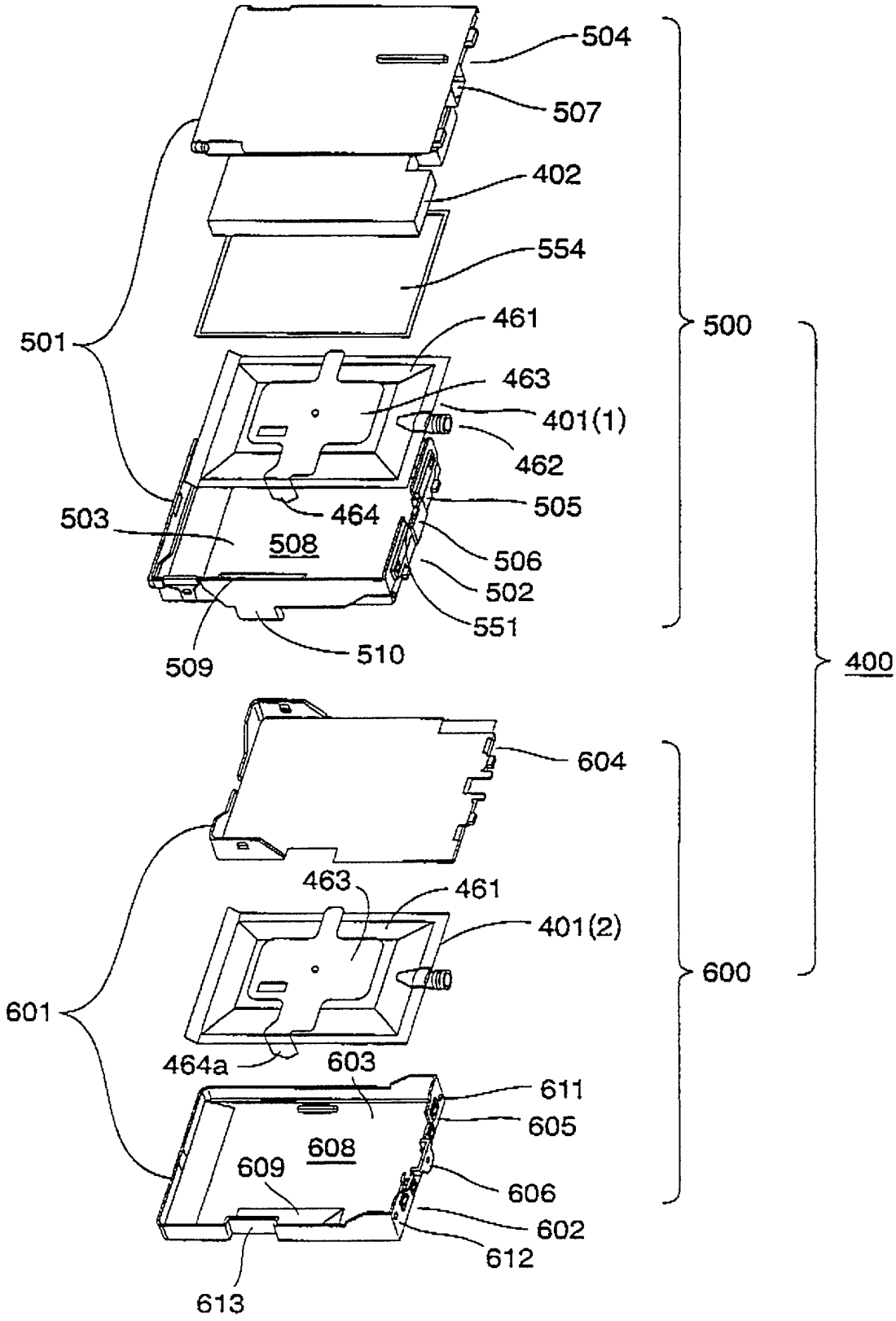
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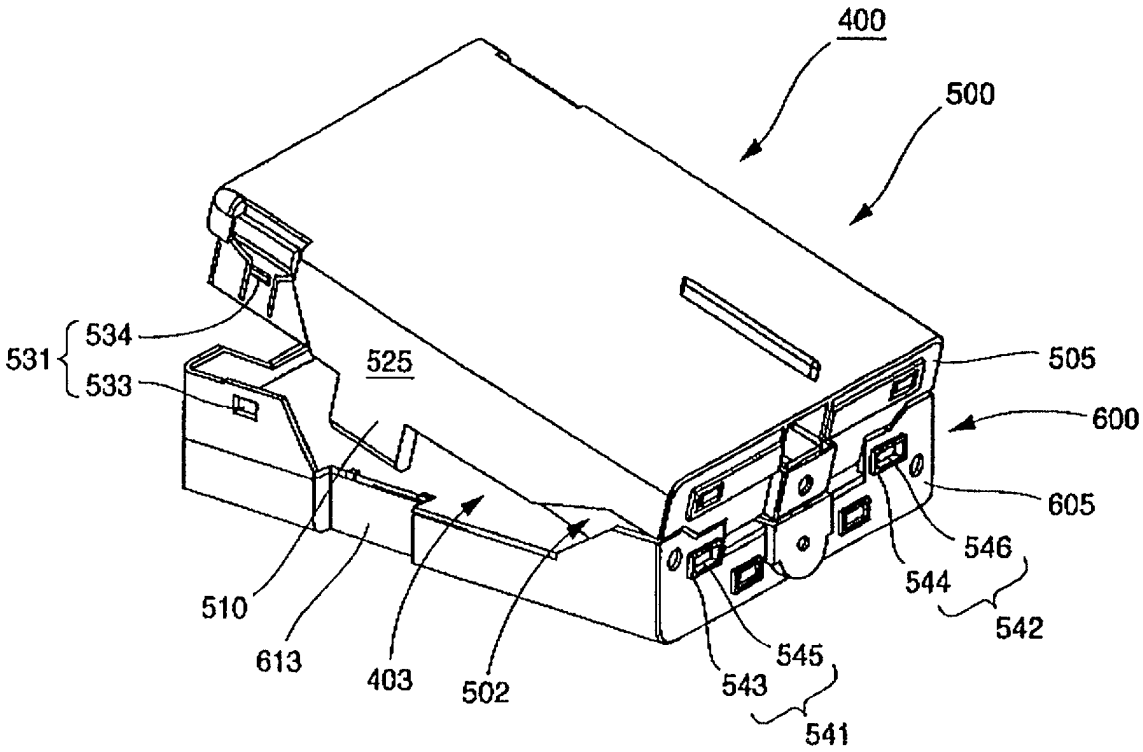
Fig.22



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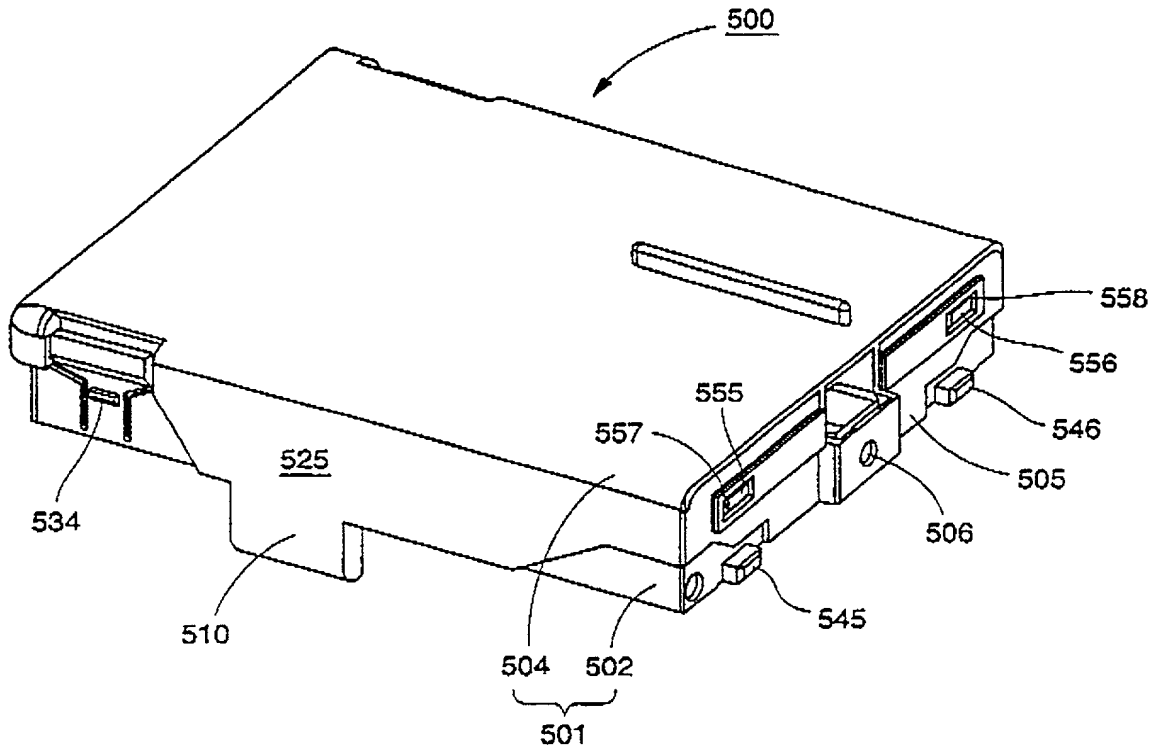

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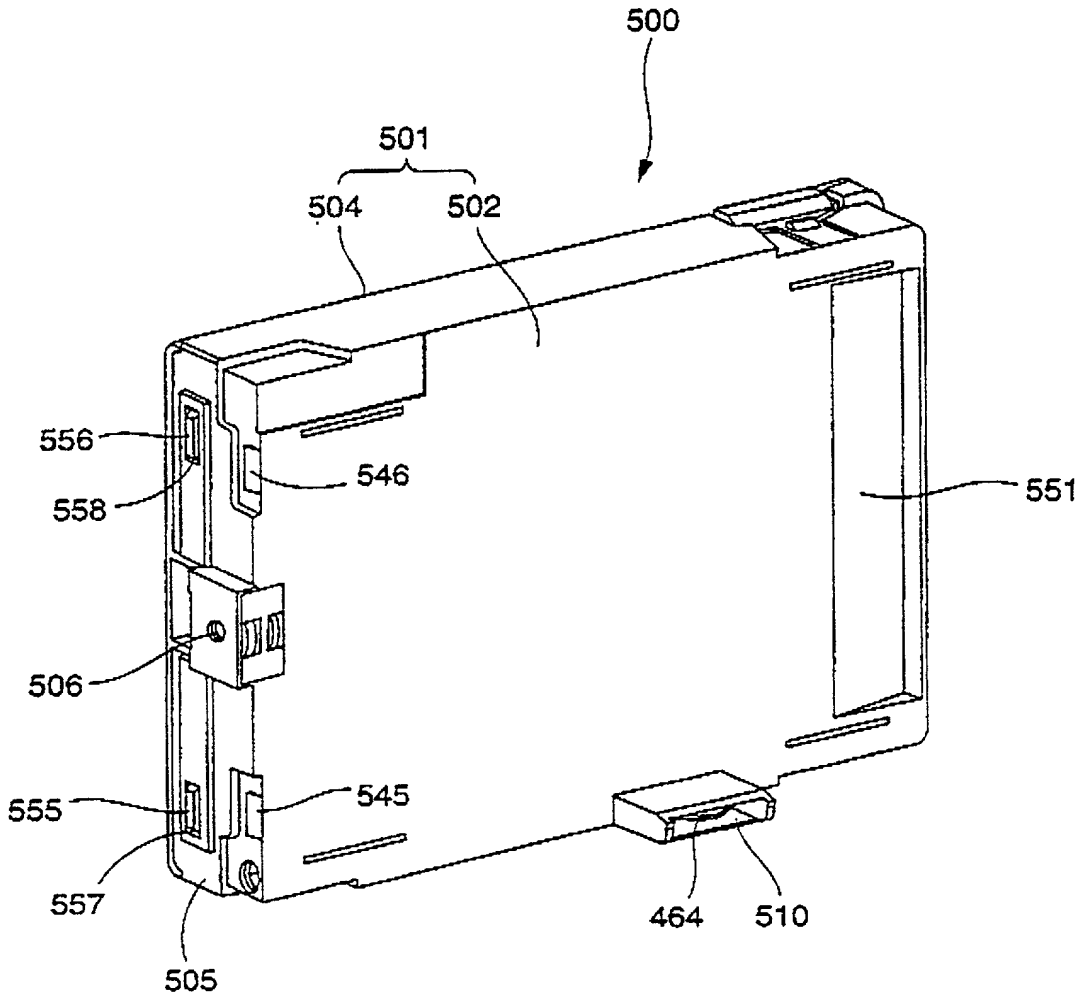

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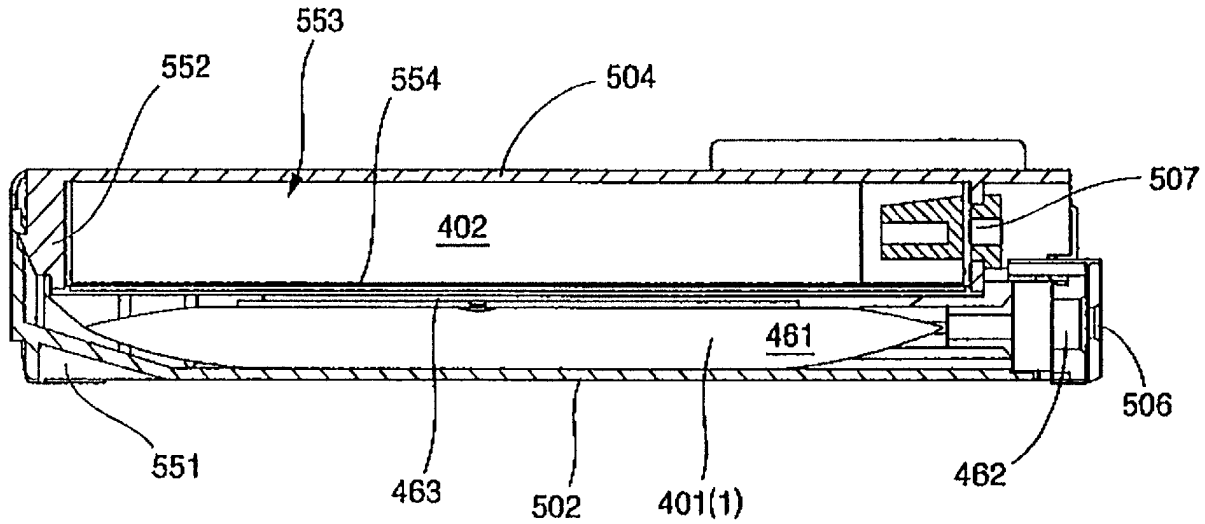

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Fig.26

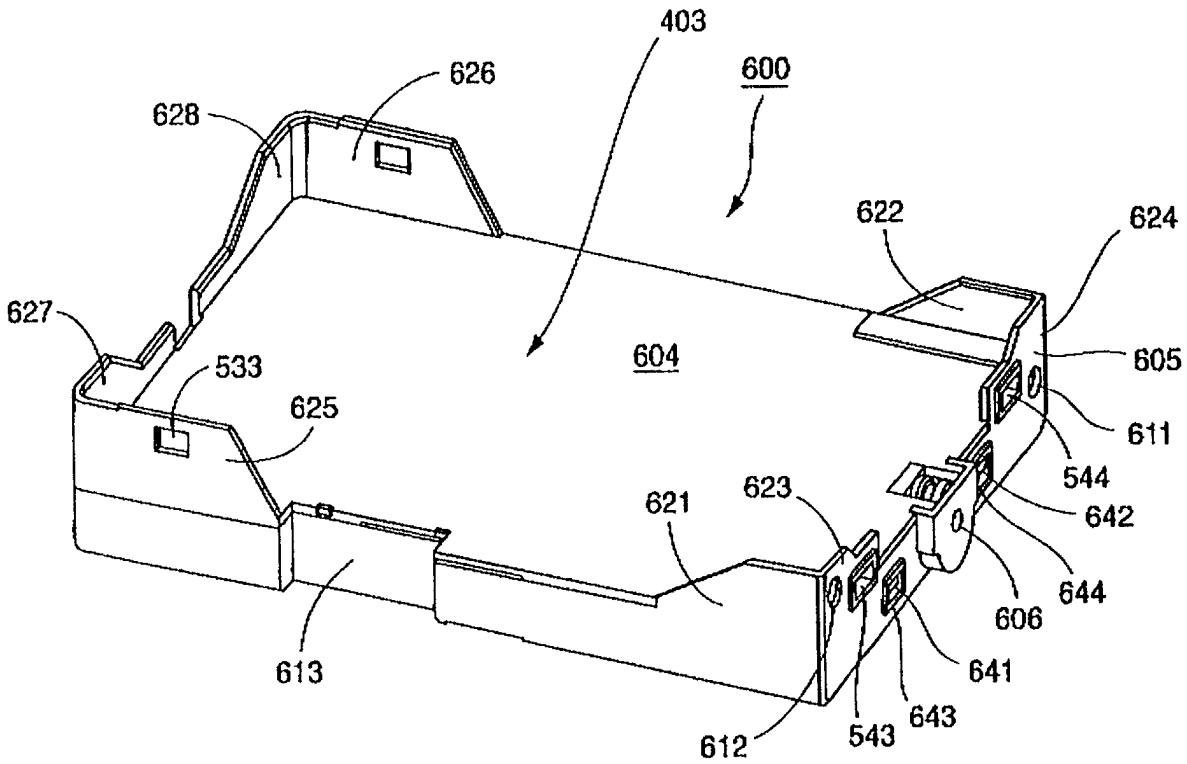


Fig.27

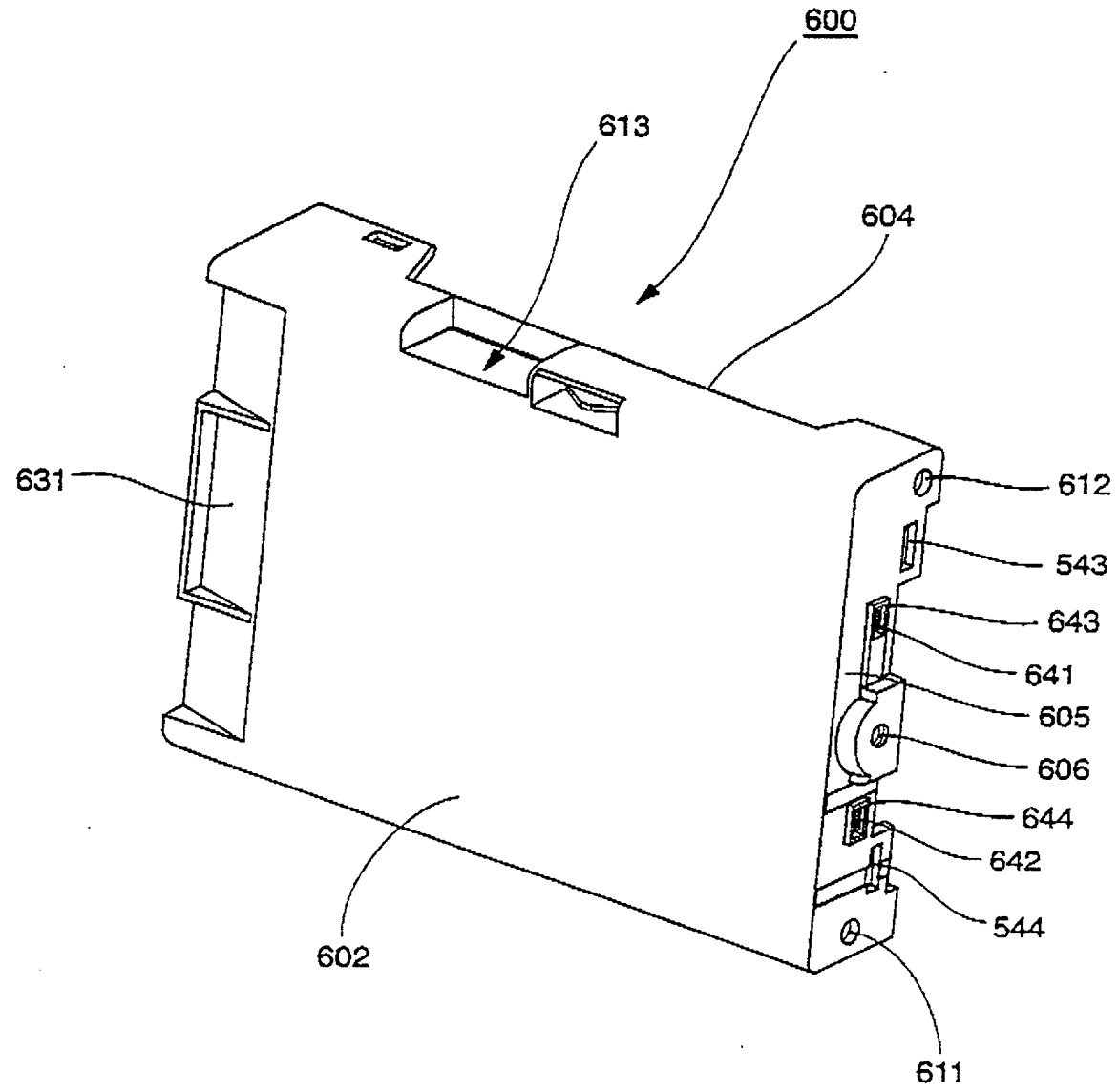
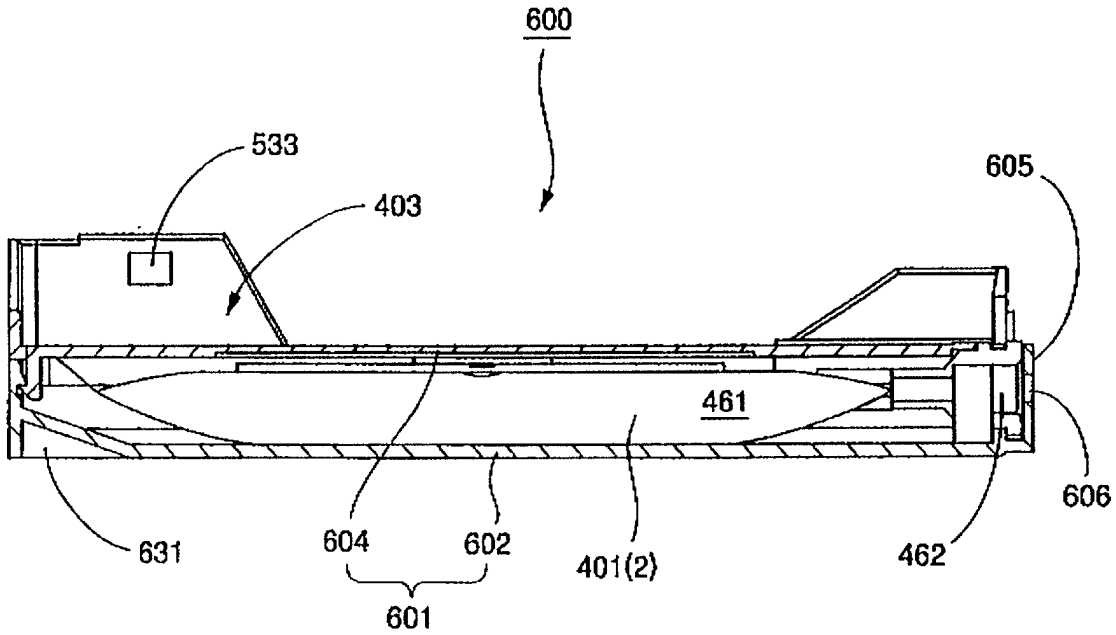


Fig.28



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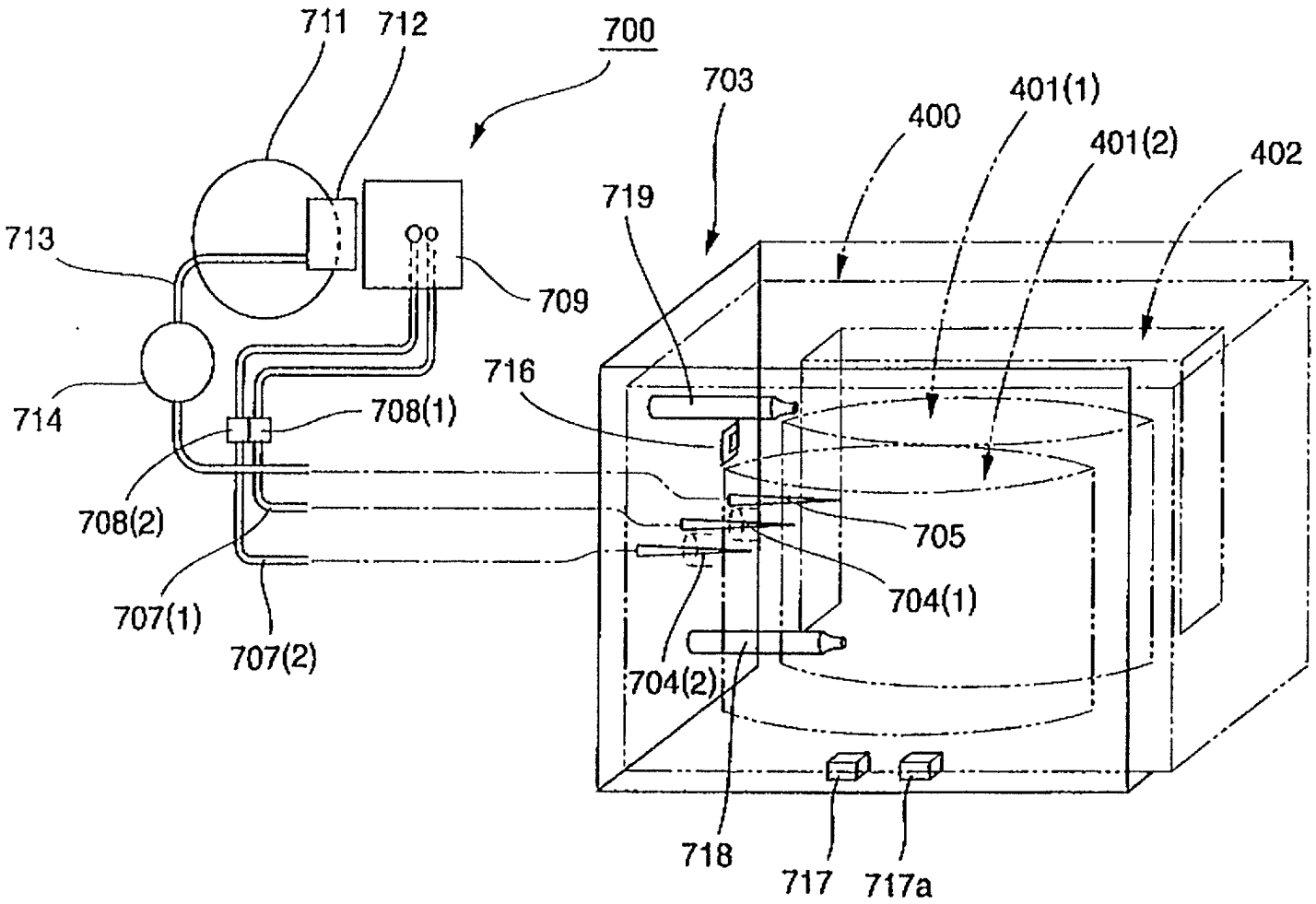
Fig.29